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CAVE & BASIN SUMMATIVE EVALUATION

—

AN OBJECTIVES-BASED POST-OCCUPANCY STUDY

—

DECEMBER 29, 1986

Prepared for:
Manager,
Cave & Basin
Centennial Centre
Western Region, Parks

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a. Scoring keys
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EXECUTIVE SUMMARY and RECOMMENDATIONS

PURPOSE OF THE PROJECT

In June, 1986, Behavioural Team were asked to report on visitor reactions to the *Cave & Basin Centennial Centre* in light of performance objectives. The two goals of the contract were:

- to provide an evaluation of facility performance relative to published objectives after the initial period of restoration of operations, and
- to assist the facility by providing recommendations for improvements and fine-tuning.

By using an objective-based approach, it is possible to compare the expectations of designers with post-occupancy results. In instances where the performance of the facility falls short of expectation, improvements can be instituted. The standards set in the performance objectives create body of fixed references for performance even when particular goals prove optimistic or pessimistic relative to field tests.

In the present study, goal setting was set in motion by Professor Walter Brown. He was assisted by Scott Meis, head of Socio-Economic Information Division in Hull and Leslie Taylor, at that time, Manager of the Cave & Basin. The final ensemble of objectives used in this study were further refined and quantitative goals adjusted.

METHODS

Five field methods were used in the week of August 7—13, 1986. In decreasing order of time allotment:

(a) 262 post-visit interviews conducted as visitors left the site,
(b) 249 interviews at three sites of special interest,
(c) behavioural observations,
(d) calibrations at 7 traffic counters to establish correction factors,
(e) 25 handicapped-persons interviews to judge accessibility.

Special thanks are due Dana-Mae Grainger of Socio-Economic Information Division for her assistance in refining the methods used and in promoting cooperation among Statistics Canada, Parks Western Region, and Behavioural Team.

ACHIEVEMENT OF OBJECTIVES

TRAFFIC FLOW — OVERALL: 8 of 8 objectives tested were approached or exceeded.

COGNITIVE OBJECTIVES BY MEDIA AREA

OVERALL: 2 of 2 objectives were approached or exceeded.

LOWER SOUTH BELEVEDERE: 1 of 2 objectives was exceeded.

SECOND FLOOR LONGHOUSE: 5 of 7 objectives were approached or exceeded.

DISCOVERY TRAIL: 6 of 6 objectives were approached or exceeded.

MARSH TRAIL: 5 of 6 objectives were approached or exceeded.

PAMPHLET: 3 or perhaps 4 of 6 objectives were approached or exceeded.

BEHAVIOURAL INVOLVEMENT: 2 of 7 objectives were approached or exceeded.

AFFECTIVE OBJECTIVES: 3 of 3 objectives were approached or exceeded.

"APPENDIX C" OBJECTIVES: these objectives did not have quantitative goals.

Taken as a whole, the objectives were well achieved.

RECOMMENDATIONS FOR CHANGES TO THE CAVE & BASIN

Some implications may be drawn from information in the report:

1. Regarding overall policy...

   - The Cave & Basin serves an important local function a strong component of which is recreational swimming for guests living closer than Red Deer.

   - At least in relative numbers, the site is not serving an important role for Canadians outside Alberta. This is a circumstance shared by other national parks as well.

2. The design of the concourse entrances to the belvederes could be enhanced as detailed in the body of this report. Because the swimming pool cashiers are often the only visible staff, many visitors are obliged to join the disorderly bulk queue at the swimming pool wicket in order to get information.

3. Although it is a matter of judgment, the materials in the Longhouse tend to be short on factual content and long on Parks promotion. Of course, it is reasonable to suppose that the Cave & Basin is viewed as a fitting venue to promote Parks. However, information feedouts work better when they are:

   (a) glossy in format but also substantive in content,
   (b) balanced in their presentation, not unconditionally self-congratulatory, and
   (c) closely heeding the psychology of the visitor.

   The design and operation of the Longhouse could benefit in a number of specific ways outlined in the body of the report. In particular, the computer vote exhibit is somewhat faulty and perhaps should be removed for upgrading.

4. Problems of maintenance and response to handicapped persons calls in the swimming complex are detailed in the body of the report.

5. As with the Marsh Trail, the Discovery Trail media worked well as indicated by the generally high quality of answers to test questions. However, it looked like not many people were getting a sniff of sulphur from their scratching efforts at the naturally impregnated limestone boulder.

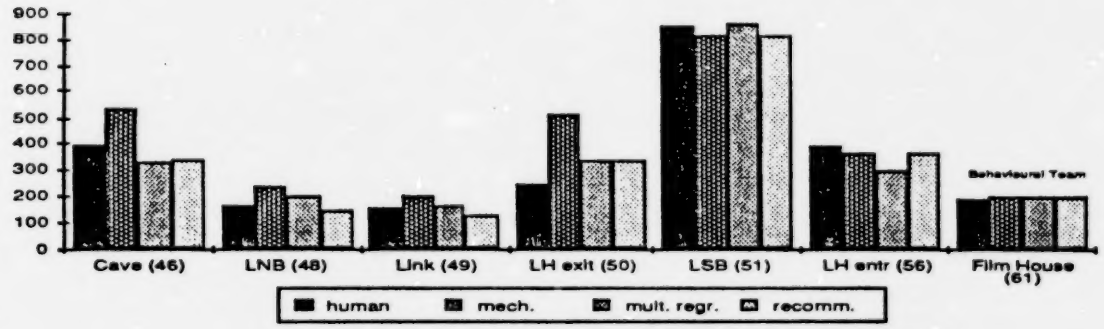
6. In comparing human and mechanical **traffic counters**, the correlation is about .90. A close examination of the data indicates that the three counters mounted at a height of 51 cm or more tend to be within a few percent of correct. But the four counters at lower heights overestimate.

   A simple dual correction procedure is recommended:

   1. if the counter is at 51 cm or higher, use the reading,
   2. if the counter is lower, multiply the reading by .65.

   The chart below compares four ways of estimating the true figures.

COMPARISON OF ALTERNATIVE MEANS OF ESTIMATING PEDESTRIAN VOLUMES



OBJECTIVES

TRAFFIC FLOW — OVERALL

1-8. The overall traffic flows as indicated by respondents ("IND.") compared to the objectives ("OBJECT.") were as follows.

		OBJECT.		IND.
1.	Swimming area	14%	....	33%
2.	LSB	89%	....	89%
3.	The Cave	85%	....	89%
4.	Longhouse	58%	....	64%
5.	Basin area	45%	....	61%
6.	North Wall Walk	20%	....	51%
7.	Upper (Disc.) Trail	15%	....	29%
8.	Lower (Marsh) Trail	15%	....	18%

It may be observed that the pool, Basin, North Wall Walk, and Upper Trail are receiving greater numbers of visitors than expected by the objectives.

COGNITIVE OBJECTIVES BY MEDIA AREA

OVERALL

"9. 90% of visitors... will know they have been at the birthplace of Canada's national parks."

87% of all post-visit respondents knew that the first national park was established at the Cave & Basin. There is a slight relationship between length of visit to the site and number of visitors acquiring this knowledge, r=.10, N=240. Please also see Objectives 12, 15, 16, 23, and 41 for results relating to specific sites.

"10. 50%... will know the word "Centennial"... refers to 100 years of parks in Canada."

74% were correct when asked this question. Again the relationship with length of visit was slight but negative, r=-.03, N=237.

LOWER SOUTH BELEVEDERE

"11. 90%... will know that the Cave contains a thermal spring."

77% knew that the Cave contained a thermal spring because they correctly indicated to the interviewer that it was warm (not cool), came from a spring, and was heated by the earth

Although the criterion — which was approved by the Cave & Basin management — is missed by 13%, it should be noted that respondents had to identify three components which defined a thermal spring. If a less demanding criterion were set, a higher percentage would result.

"12. 80%... will know discovery of the hot springs... led to founding...."

85% of those who went to the LSB knew where the parks began and 46% knew why.

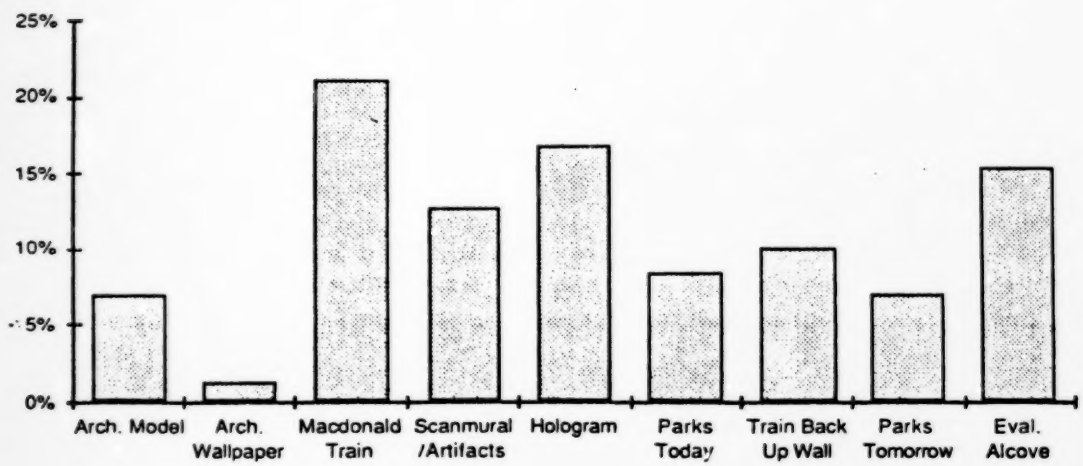
13. [Not covered in the study.]

SECOND FLOOR LONGHOUSE

"14. 95%... will stop and look at at least one piece of exhibit material."

Visitors who entered the Longhouse averaged 12.4 minutes there (σ=8.7, N=151), with a median visit of 10 minutes.

LONGHOUSE EXHIBITS "LIKED BEST"



"15. 90%... will know Banff was... first national park."

89% were correct.

"16. 90%... will know discovery of the hot springs... led to founding...."

53% knew the fact correctly. This is 19% better than those who did not visit the Longhouse.

"17. 80% will know that the first reserve was founded a century ago."

87% (58 respondents) knew this fact.

"18. 60% will know that attitudes toward national parks have changed over the last century."

In order to test whether visitors had substantive knowledge of changes, they were asked to give one example of how attitudes have changed. 53% (42 people) were able to mention one correct example.

19. [Not covered in the study.]

"20. 50% will know that Parks Canada protects natural and cultural heritage."

83% or 69 people knew this.

"21. 80% will know that we are trying to expand...to all natural regions and historic themes."

88% (73 visitors) were aware of this.

DISCOVERY TRAIL

"22. 80%... will know that the original 'discoverers' used the vent...."

78% (62 people) knew that fact.

"23. 80%... will know discovery of the hot springs... led to founding...."

86% of those on the Discovery Trail were correct about where the parks began and 50% were correct about why.

"24. 70% will know [why] the water is hot...."

68% (54 people) knew that the water is heated deep in the earth's crust.

"25. 70% will know that the smell is caused by the sulphur in the water."

94% (76 people) where correct about the sulphur smell.

"26. 40% will be able to point to an outcropping of tufa that has been pointed out to them by one of the trailside media."

Because interviewing was done as visitors exited the trail — rather than in proximity to a tufa-related sign — pointing to *any* tufa was considered an acceptable answer. 54% of respondents, 43 individuals, were able to correctly do so. A block of tufa was moved to a spot adjacent to the interviewer for the convenience of visitors. It was replaced to its normal station afterwards.

"27. 50% will know that the sulphur springs were thought to have marvelous healing properties.

"98% (78 people) knew that.

MARSH TRAIL

"28. 90% of visitors who have walked the lower trail system will know that the hot springs water changes the surrounding environment."

82% (66 people) were able to correctly name one of a variety of changes.

"29. 80% will know that the hot springs water remains unfrozen through the winter."

Only one person (1.2%) incorrectly thought the spring freezes in the winter.

"30. 50% will know that the Banff longnose dace lives in the outflow and is rare and endangered."

75% (62 people) knew that rare or endangered species live in this water. 40% (23 people) could identify the fish.

"31. 50% will know that the warm water keeps some plants green all winter."

77.4% (65 people) were aware that some plants stay green all winter.

"32. 40% will know that a few birds...stay.... [through the winter]."

77% (65 people) did know that.

"33. 80% will know that the area is fragile."

93% (78 people) knew that.

34-36. [Not covered in the study.]

PAMPHLET

"37. 100% will find it easy to read and comprehend."

49% of respondents took a pamphlet. Visitors were asked, "Did you find it easy to understand?" 94% said "Yes," and a further 2% were mixed in their answer. There were no appreciable differences with age but only a third of teenagers seem to pick up pamphlets. Readers average 5.8 minutes "spent reading it." Some 81% found the pamphlet useful.

"38. 100% will find it interesting."

94% reported that it was interesting and a further 6% were mixed. But no one said it was not interesting.

39. [Not covered in the study.]

"40. 20% will find the map useful."

49% of those who took a pamphlet used the map.

"41. 100%... will know discovery of the hot springs... led to founding...."

Of those who took pamphlets, 91% knew where the national parks began and 54% knew why.

42. [Not covered in the study.]

"43. 80% will be able to use the diagram to explain the workings of the spring."

63% were able to successfully use the map to explain the workings of the spring.

Without specific media tests, it can not be accurately stated what aspect of the map might be improved to bring the success rate higher. However, it can be suggested that plainer colouring and clearer instructional graphics might be helpful — at some damage to æsthetic values.

44-51. [Not covered in the study.]

BEHAVIOURAL INVOLVEMENT

"52. 50% of visitors to the Cave will feel the water."

87% felt the water.

"53. 50% of visitors to the Basin main deck will feel the water."

18% of visitors to the Basin main deck were observed to feel the water. A review of factors leading to this low number are presented in the body of the report. Of visitors who *didn't* feel the water...

- 45% believe it wasn't easily reachable,
- 42% believe it didn't look clean, and
- 13% had miscellaneous other reservations.

"54. 70%... will use the telescopes."

Over the course of an hour of daylight visitation, 24 of 45 visitors were observed using the telescopes. That is 53%. It may be that an insufficient number of people know that the telescopes are free and so greater promotion of that fact would be helpful.

The telescopes chosen were designed partly to accommodate the need for timers and security for the money collected — not important for this application, of course. A design with more consideration of human-factors would lead to more, longer, and easier use by a greater range of visitors.

"55. 70% of visitors to the Bird Blind... will look for [water] birds."

Only visitors who looked for birds through the eye slots were deemed to be "using" the bird blind. In one hour, 22 of 36 visitors looked for birds — 61%.

"56. 70% of visitors to the fish viewing deck will look for fish."

In one hour, 28 of 38 visitors, 74%, looked for fish from the viewing deck.

"57. 70%... will use the scratch 'n sniff boulder."

In one hour, 18 of 46 visitors, 39%, manipulated the spike in order to smell the sulphur.

The spike is not mounted at a height to be visually prominent. Some people might be hesitant about hefting the rusty-looking spike Often the spike hangs behind the boulder. A certain number of visitors notice others in their group (or un-related visitors) who can't smell the sulfur and thus don't bother trying to smell it for themselves.

"58. 20% of the swimmers will rent ... 1914 style bathing suits."

3% of visitors rented the 1914 style suits but there is insufficient data to identify likely reasons for this low percentage.

AFFECTIVE OBJECTIVES

59. [Not covered in the study.]

"60.1 100%... will report their experience was... comfortable

98% agreed that their visit was comfortable. However, among adults 20-34 and among seniors, about 4% did not agree.

60.2. [Not covered in the study.]

"60.3 100%... will report their experience was... worthwhile

99% agreed that their visit was worthwhile. Only one post-teen and one young adult felt their visit was not worthwhile!

"60.4 100%... will report their experience was... enjoyable.

One young adult (out of 232 respondents) didn't have a good time. Realistically, however, for all useful purposes, this and the previous two objectives are met.

THE FOLLOWING OBJECTIVES ARE IDENTIFIED AS "APPENDIX C"

"C1. Why do visitors come to the Cave & Basin?"

48%	..... have general tourist motivations*
20%	..... come to use the pool
10%	..... are hosting others
9%	..... are part of an organized tour
6%	... wanted to see the changes since the restoration
5%	. name other specific attractions (other than Cave)
2%	..... have other reasons
1%	..... mention coming to see the Cave
101%	

N=257

* Includes a range of non-specific responses indicating the respondent is touring, visiting, and/or traveling about and has come to the *Cave and Basin* in that context.

Of those visiting for the first time, 14% say they have come to swim as compared to 27% for repeat visitors.

Where do visitors come from?

closer than Red Deer	23%
other Alberta	18%
BC, SASK, MAN	14%
other Canada	8%
nearby US	10%
other US	21%
other	7%
	101%

"C2. Repeat visitation — is it occuring/will people return?"

38% of visitors had visited previously and, presumably, that is the number who would come again. But rather more (61%) told the interviewer they would come again.

"C3. How much time do people spend... what are their activities...?"

This objective is reflected in the traffic counts presented under Objectives 1-8. In terms of visitor preferences, the single best-liked aspect/space of the visit was the Cave!

the Cave	26%
the pool	24%
good atmosphere	20%
Longhouse and exhibits	11%
Discovery Trail	7%
Marsh Trail	5%
other	5%
"liked it all, everything"	4%
	102%

C4-6. [Not covered in the study.]

C7.1 Partially relates to reactions to the swimming area water temperature.

When asked about water temperature, 8% found it "too warm," 21% found it "too cool," and 71% found it "OK." Men and women had precisely the same percentages.

C7.2. [Not covered in the study.]

C7.3 Relates to handicapped visitors.

Twenty-five handicapped visitors were interviewed. These respondents were largely older adults with 8 older than 65.

Their reasons for coming to the Cave & Basin were as diffuse as for the other visitors and quite similar. Some mentioned the good accessibility of the site .

Handicapped visitors:

- seemed to have visited all around the site,
- were fully cognizant of the care and forethought devoted to mobility access by Parks authorities — and the single lapse from ready accessibility, and
- responded very much like non-limited visitors.

Reaction time to the signal in the wheelchair change room was tested twice. Staff did not respond to either request due to an electrical fault. However, response time for help with the Longhouse inclinator was short.

C7.4. [Not covered in the study.]

C8. Relates to visitor wishes for improvements.

Improvements are treated in the body of the report under each separate visitor area. But overall dislikes are tabulated below:

"nothing"	[57%]
natural problems such as mosqu. and smell	18%
too crowded	10%
other	7%
aspects of the pool (eg water too cool)	5%
criticism of a specific exhibit	3%
	100%

INTRODUCTION AND METHODOLOGY

1. BACKGROUND

In May 1986, Behavioural Team were asked to report on *summer visitor* reactions to the *Cave & Basin Centennial Centre* particularly in light of performance objectives. These objectives had been established before the facility "redevelopment was designed, and guided the design work" — to quote a Manager of the facility. In addition to examining how well objectives were being met, the contractor was to identify weaknesses and strengths which might be improved through "fine-tuning" of facilities or operations.

As an objective oriented study, the views of designers and planners who directed the redevelopment could be compared to observed outcomes in the post-occupancy period. This approach brings a neutrality and objectivity to the process which is not possible by simply using post-occupancy measurements in the absence of planning goals.

A negative consequence of the approach is that objectives set "in a vacuum" in advance of construction may not always be on the mark. The contractor who prepared this report takes a relaxed approach to objectives, neither being harshly critical for failure to achieve à priori goals nor, in the interest of even-handedness being effusive about achievement.

From the contractor's point of view — in light of measured performance — the results speak for themselves. In some cases — in the light of measured performance — some objectives ought to be set lower in the future. Perhaps some were set too low and the planners were not motivated to achieve yet higher performance.

This report attempts to follow a middle course. Where results trail objectives by 10%, attention is called to this circumstance. This pays due consideration to the original goals but does not focus on minor departures from the objectives.

2. OBJECTIVES OF THE PROJECT

There are two major purposes for the research delineated below:

1. to provide an evaluation of facility performance after the initial period of restoration of operations, and

2. to assist the facility by providing recommendations for improvements and fine-tuning.

The original planning process for interpretation and orientation media and for facilities at the Cave & Basin included the development of measurable objectives. These objectives formed the basis of the first purpose noted above.

The overall purpose of the summative evaluation is:

"...to evaluate the performance of interpretive and orientation media and facilities at the Cave & Basin, and to provide recommendations for fine-tuning those media and facilities which are found not to be meeting their stated objectives."

With approval of the project authority, certain objectives were modified or omitted. Please see the *Index of Objectives* which details these changes.

3. METHODOLOGY

The project had five methods which derive from the requirements established by the objectives. These are listed in decreasing order of time alotment with final numbers of completed interviews shown. Due to heightened staff efficiencies, the number of completed interviews proved to be larger than the number originally estimated in the *Planning Report* (shown in square brackets.) The increase has a beneficial effect on the powers of statistical test (called the β) but no deleterious effect otherwise.

(a) 262 post-visit interviews [220],

(b) 249 locale interviews [180],

(c) behavioural observations,

(d) traffic counter calibration at 7 counters,

(e) 25 handicapped-persons interviews.

These methods are explained in more detail as follows.

4. RATIONALES

(a) A post-visit interview was used to:

- collect demographic characteristics of visitors, including age, sex, group size, any previous visits, and residence,
- measure cognitive objectives,
- measure affective objectives,
- measure gross traffic flow -- where visitors go and what they do at the site; how much time they spend at the site; where they spend most of their time,
- determine overall reactions to the Cave & Basin,
- collect reactions to some of the interpretive media (where not covered by Locale interviews), and
- to be a collection opportunity for comments from visitors.

(b) Locale interviews were conducted at three sites of special importance to the objectives. They:

- focus on information provided to visitors at those sites (see the interview questions attached below.)

Interview approaches (a) and (b) were based on a floating sample of individuals entering or crossing a defined area or mark during the pre-assigned data collection period. Interviewers were trained and practiced to present the following information in the solicitation for the interview:

- purpose of project,
- sponsorship,
- name of the interviewer and the contractor,
- estimated length of time for the interview,
- Parks resource person if further information about the study is sought,
- assurance of confidentiality.

Because cognitive objectives are measured by asking "skill testing" questions, interviewers were carefully scripted to prevent visitors from feeling they were involved in a grade-school exam.

Materials used in training interviewers can be found in the appendix.

(c) Behavioural Observations were carried-out at the Cave & Basin:

• to observe visitors stopping at certain interpretive media and features of the site as per the objectives,

• to record *numbers* and resulting *percentages* of visitors who stop and/or otherwise interact with certain interpretive media and features of the site noted in the objectives,

• to observe behaviours related to objectives.

Observations were unobtrusive. The specific sites for observations are identified in the objectives. The general locations were:

1. Cave area,
2. Basin area,
3. Marsh areas,
4. Discovery Trail ("Scratch and Sniff" only)
5. Swimming and Locker-room facilities.

In some cases, observations were limited to basic "nose counting" and in other cases to more in-depth examination of conditions of use and patterns of behaviour. In the latter instance, the observations may not have provided fresh reportable insights to add to survey results. Thus in this report, observations to a particular area may be subtly integrated into the reporting of survey results while in other areas, the observations may be more visible as independent results.

(d) Traffic calibrations were used to:

• establish the correction factors to be applied to 7 light-beam traffic counters to improve the accuracy of traffic records. The calibration compared the tally of the automatic counters to manual counting.

These observations are straightforward comparisons of counts made by a human counter — presumably the criterion of good accuracy — and counts made by the opto-mechanical counter installed at the sites in question. The 7 counters were all indoors in the main building.

(e) Handicapped-persons interviews:

• were designed to question handicapped visitors about the degree of accessibility they experienced in the Centre.

The solicitation for handicapped visitors included the same elements indicated for the (a) and (b) interviews above. Every effort were made to interview the handicapped person him/herself but where communication difficulties were present, escorts assisted the interviewer in understanding the sentiments of the respondent.

Questionnaires for interviews and recording materials for observations are appended.

5. Sample Design

For the post-visit interviews, after one interview wound up, prospective English-speaking volunteers were selected for the next ("floating sample.") For the handicapped person interviews, about half the sample was collected by Behavioural Team staff and half by Parks staff (who approached qualified respondents for a few weeks after the main data collection period ended.)

The sampling frame was compiled on an on-going basis as qualified individuals left the Cave & Basin or completed their tour of specific locales specified in the following chapters. Interviewing took place August 7–13, 1986, a typical mid-summer period with representative volumes of visitors.

6. Data Collection

Participation in the interviews was voluntary. Interviewers administered the Post-visit interviews as visitors exited the site near the gate gazebo - a defined narrow roadway

which all exiting visitors tread. Interviewers filled-out contact records. These are included in the appendix. Interviewing began at approximately 10:30 AM, as the first "early birds" begin to leave and ended at approximately 8:30 PM which is a half hour after the buildings close.

Training of interviewers includes modeling of performance by the trainer followed by practice and trial interviews supervised by the trainer. The senior researcher, Dr. Barkow, was responsible for training.

Three interviewers, a mature man and two mature women were retained. All have past work associations with the park and were thus (a) acquainted with the range of responses which visitors might offer (b) capable of conducting and recording interviews intelligently. They are residents of Banff and have strong work histories. Based on the low number of problems arising during data coding, it may be suggested that interview staff provided better than average quality of work and fewer procedural lapses.

The "Contact Record" served as a control form for recording all contacts made by interviewers. On it were recorded if a person solicited had agreed to an interview and, if so, was it completed.

Due to the nature of field work and since respondents are not asked to identify themselves, no verification of responses by follow-up was possible. Quality of interviewing is controlled by using a minimum number of the most qualified interview personnel.

By and large the methods worked satisfactorily to assemble the information as per the *Planning Report* submitted to Statistics Canada. In as much as Parks wished to include as many as possible of the formal objectives in the study, times for questions aimed at fine-tuning information were limited. August 7 was a Thursday.

APPROX. DAILY VISITOR VOLUMES*

AUGUST, 1986

7	3465
8	3740
9	4850
10	5125
11	4225
12	3465
13	3465**
AVERAGE	3796

* 65% of daily LSB counter readings - see page 63.
** Estimated.

What if there were questions or complaints about the facility? For complaints, interviewers were prepared — as with data arising directly from the questions asked — to record complaints under appropriate questions In addition, liaison with Interpretation staff was established so that the contractor's interviewers could direct visitors to Parks staff for appropriate reaction and de-fusing of the complaint.

7. PRE-TEST

Procedures were pilot-tested and reviewed to provide feedback on the following:

- time necessary to complete interview,
- respondent sensitivity to the interview length,
- any difficulties in understanding the questions, and
- any difficulties in the interviewers' recording of the responses,
- location of interview sites,
- ease of conducting unobtrusive observations,
- traffic count procedures,
- other heretofore unidentified problems.

Interviews took between 5 and 15 minutes, with length a function of the respondent's own enthusiasm. As in the course of some dozen other similar Parks exercises conducted by this contractor, it was apparent that visitors were not antagonistic to being approached by polite interviewers. In other words, pilot testing indicated no major problems.

Pilot testing was uneventful — a good outcome! The initial interviews were included in the data set but some re-coding (and a few deletions) on the part of the interviewers was needed in light of later clarifications of what answers would be considered right or wrong.

8. PROCESSING AND STORAGE OF DATA

Data were processed using the "Number Cruncher Statistical Systems" program written by Dr. J. Hintze, a 400K program. This program stores data in Macintosh "HFS" disk format with commas between fields and carriage returns between records — as per one of the conventional formats used by social researchers. At the time this report is prepared, all data are archived by Parks in hard copy but future plans provide for electronic archiving in a format not yet defined.

9. CONFIDENTIALITY/PRIVACY

Responses were confidential and no request for personal identification was made. Questionnaires were identified by a serial number only and this serialization was applied just prior to data entry for management purposes only. Questions deal with the facility and thus do not intrude on the privacy of the individual's own affairs.

10. PUBLIC RELATIONS

Field staff were fully trained and briefed for this particular project and managed by consulting staff. Briefing included proper dress and recording/entry procedure. Special care was devoted to preparing interviewers to work with handicapped people. They addressed the handicapped person first, not any attendant present, and used normal courteous discourse and tone of voice.

The solicitation to the interview (as mentioned above) included a brief description of the purposes of the study and identification of the interviewer and his/her affiliation. Any person, interviewee or not, who wished further information, was directed to Interpretive staff.

CHARACTERISTICS OF THE SAMPLE AND GENERAL REACTIONS

In June, 1985, as a celebration of 100 years of national parks service, Environment Canada, Parks, opened a large interpretive centre and swimming pool complex at Banff National Park. Called the "Cave & Basin Centennial Centre," this site outlines the origin and development of the National Parks System using a range of media and techniques.

The main elements of this complex are:

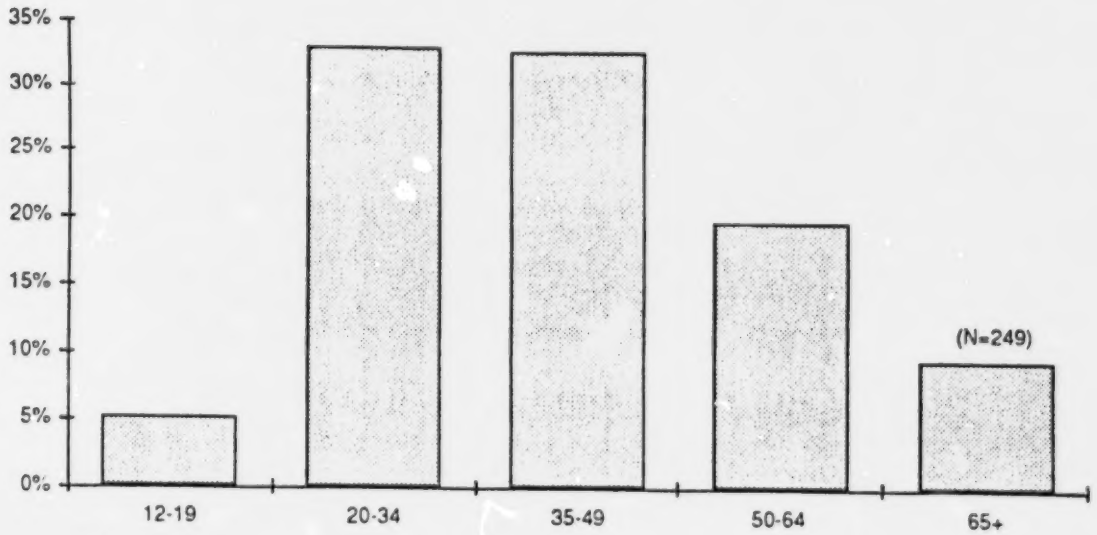
1. the Cave,
2. the Basin,
3. the Longhouse which is an exhibit hall,
4. the north and south belvederes,
5. two nature and interpretive trails (Marsh and Discovery),
6. the swimming facility,
7. a multi-media theatre, and
8. a tea house operated as a concession.

The survey information presented in this chapter derives from the post-visit answers. These were provided by 262 individuals. This group included 136 males and 124 females, all 12 years and older. The ages of the sample are shown in the chart below. No population statistics were collected against which the sample could be compared.

All were leaving the facility. Interviewing was conducted uniformly through the day. The data in this and following chapters is based on substantially complete interviews. Where a respondent refused to deal with a particular question, the "N" (representing the term "number") associated with that question is less than the total number of respondents interviewed. However, these variations are too small to seriously influence results.

The sample ratio (percent of visitors interviewed) can not be precisely estimated but was below 2%.

AGES OF POST-VISIT RESPONDENTS



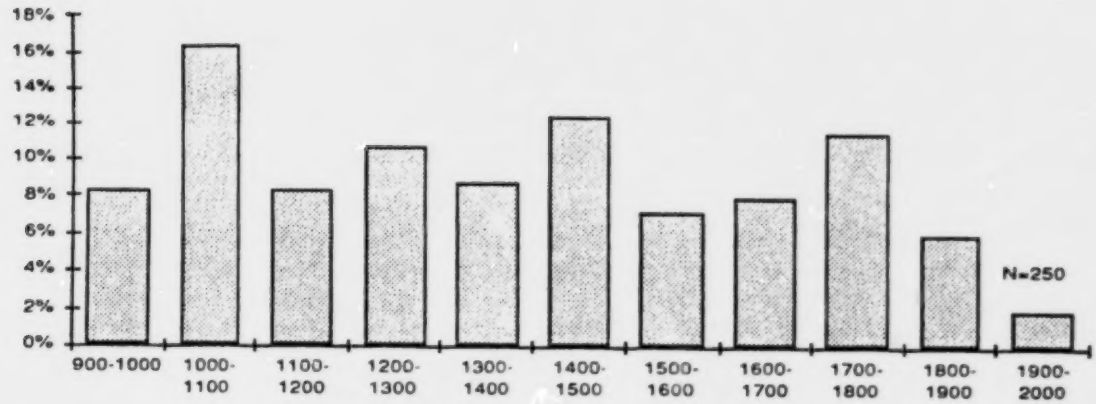
Due to the nature of sampling procedure, precise estimates of arrival and dwell times at the site are not possible. But serviceable estimates can be offered.

The "average" time of arrival at the site was around 14:00 and the median arrival was 13:45. These data were recorded in terms of minutes past 10:00.

[As in other instances in this report, arithmetic means for skewed data should be understood as *suggestive* rather than as *definitive.* Generally medians and inter-quartile ranges are presented as more descriptive of the underlying distribution of responses. For those instances where the means might be considered important, standard deviations are also given.]

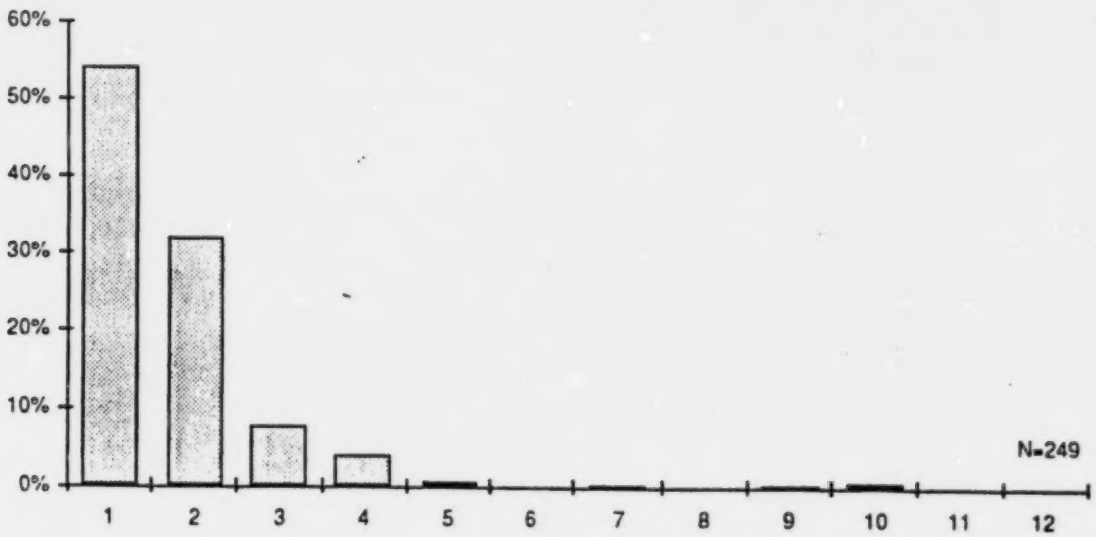
The distribution of arrivals was quite flat; one half of the sample arrived between 11:15 and 16:40 — as shown on the following chart. It should be noted that time of arrival estimates can be biased by sampling procedures. In this study, arrivals may not be quite as uniform as indicated.

TIME OF ARRIVAL



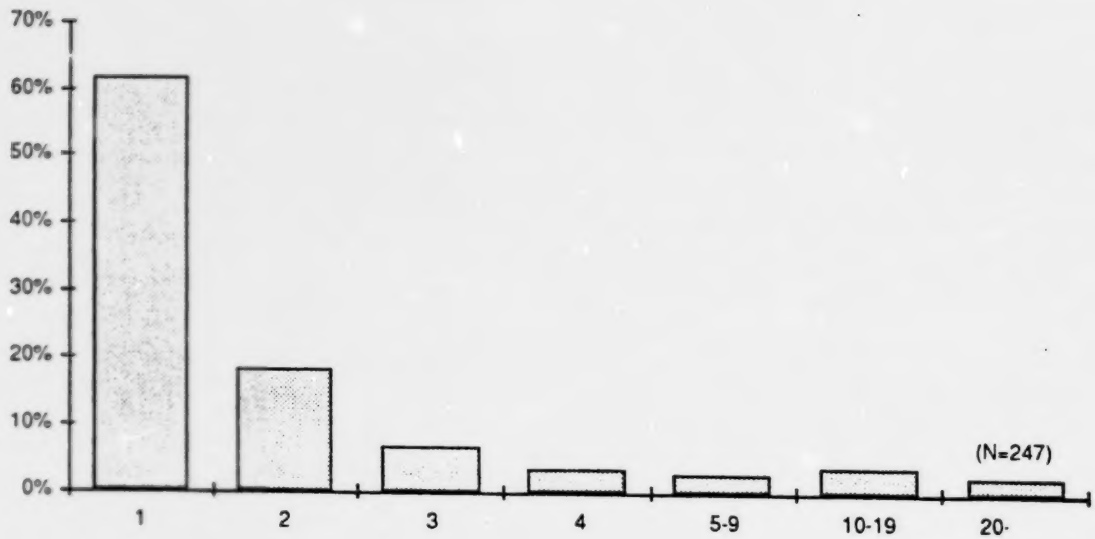
The average visit dwell time was 79 minutes [σ=75, N=249] with a median time of 60 minutes. Half the sample visited (dwelled) between 34 and 100 minutes. There were no clear differences in length of visit between older or younger visitors. Dwell time is not as much influenced by choice of sampling method except as it interacts with time of arrival.

LENGTH OF VISIT (HOURS)



38% of respondents had been to the Cave & Basin previously. Of these, half had visited once before. The distribution of visits — objective C2 — is shown in the chart below.

TOTAL NUMBER OF VISITS (INCLUDING TODAY)



Most visitors plan to return to the Cave & Basin.

```
 61% ..... plan to return
 14% .....do not plan to return
 25% ..... don't know
100%

N=251
```

Counting people of all ages, the median group size is 3 with half the visitors arriving in groups of 2 to 4. 5% of visitors arrive in groups of 30 or more.

Based on the post-visit sample, where do visitors come from?

closer than Red Deer	23%
other Alberta	18%
BC, SASK, MAN	14%
other Canada	8%
nearby US*	10%
other US	21%
other	7%
	101%

N=260

* This term connotes Americans with ready access to the park and includes U.S. states which border on Canadian provinces from Manitoba to B.C. and from Oregon and California.

(Due to rounding procedures, table totals do not always sum to exactly 100%.)

The higher weekend visitor counts, presented earlier, re-reinforces this picture of the importance to local visitors.

Why do they come — objective C1?

48%	have general tourist motivations*
20%	come to use the pool
10%	are hosting others
9%	are part of an organized tour
6%	wanted to see the changes since the restoration
5%	name other specific attractions (other than Cave)
2%	have other reasons
1%	mention coming to see the Cave
101%	

N=257

* Includes a range of non-specific responses indicating the respondent is touring, visiting, and/or traveling about and has come to the *Cave and Basin* in that context.

Of those visiting for the first time, 14% say they have come to swim as compared to 27% for repeat visitors.

The post-visit respondents said their single best liked aspect of the visit was the Cave.

the Cave	26%
the pool	24%
good atmosphere	20%
Longhouse and exhibits	11%
Discovery Trail	7%
Marsh Trail	5%
other	5%
"liked it all, everything"	4%
	102%

N=246

Dislike responses were:

"nothing"	[57%]
natural problems such as mosqu. and smell	18%
too crowded	10%
other	7%
aspects of the pool (eg water too cool)	5%
criticism of a specific exhibit	3%
	100%

N=232

With due consideration of the warm season during which interviewing was conducted, some implications may be drawn from the preceding tables.

1. The Cave & Basin serves an important function for residents closer than Red Deer, a strong component of which is recreational swimming.

2. At least in relative numbers, the Cave & Basin is not serving an important role for Canadians outside Alberta although non-local visitation in some other national parks is comparably weak,

OBJECTIVES

A number of objectives deal with *general* aspects of the site and arise from the post-visit interviews. These are appropriately discussed in this chapter.

"9. 90% of visitors... will know they have been at the birthplace of Canada's... parks."

87% of all post-visit respondents knew that the first national park was established at the Cave & Basin. There is a slight relationship between length of visit and knowledge, r=.10, N=240.

"10. 50%... will know the word "Centennial"... refers to 100 years of parks in Canada."

74% were correct when asked this question. Again the relationship with length of visit was slight but negative, r=–.03, N=237.

"60.1 100%... will report their experience was... comfortable

98% agreed that their visit was comfortable. However, among adults 20-34 and among seniors, about 4% did not agree.

"60.3 100%... will report their experience was... worthwhile

99% agreed that their visit was worthwhile. Only one post-teen and one young adult felt their visit was not worthwhile!

"60.4 100%... will report their experience was... enjoyable.

One young adult (out of 232 respondents) didn't have a good time. Realistically, however, for all useful purposes, this and the previous two objectives are met. "

There are two further purposes listed among the objectives in the *Terms* of this project:

"C1. Why do visitors come to the Cave & Basin?,"

"C2. Repeat visitation — is it occuring/will people return?," and

"C3. How much time do people spend... what are their activities...?"

The first two objective-like questions have been treated earlier in this chapter. The final question is handled throughout the report.

THE CAVE, BASIN, AND ADJACENT AREAS

THE LOWER BELVEDERES (South, LSB, and North, LNB)

Visitors to the building first approach the east façade. This façade has two belvederes each of which has a a double-door entrance. At concourse grade, the south belvedere serves as (a) an anteroom to the Cave and (b) to the Longhouse exhibits on the second-story. The north belvedere is the entrance to the swimming area.

The two entrances have stained glass signs above their doors. But size, colour, and lighting aspects of these signs result in very poor legibility. As a consequence, visitors are not sure where to begin their visit. On busy days, both entrances are crowded and the interiors of the belvederes are obscured by visitors.

It is rare to see Parks staff outside the buildings but common to see visitors scrutinizing pamphlets and seeking information from the pool gatekeeper(s). There is a trade-off possible between numbers of staff and numbers and/or quality of signs and other orientation services. However, even with the best possible inanimate assistance, human presence, in our view, can not be held below a certain minimum level. This is a conclusion reached during the 1970's when experiments in automated site orientation services were carried out.

The only full-time human presence is the cashier gatekeeper at the swimming area turnstile. The entrance to the swimming is designed without consideration of visitor factors such as provision for line-ups, ease of reading or otherwise grasping the transaction procedures, or expeditious handling of inquiries. It does not properly create:

- queuing conditions leading to linear (as opposed to bulk) line-ups,
- information and/or visible reconnoitering to support the swim-related decisions which visitors have to make when they reach the head of the line, or
- humane and civilized conditions for getting help from the attendant(s).

These limitations could be improved by:

- enhancing on-site management to improve supervision of staff and to identify shortcomings — for example, by instituting periodic management reviews,
- providing additional staff during busy times,
- managing existing staff with greater flexibility and with more responsiveness to visitor needs,
- observing wicket personnel visitor handling procedures, introducing training

in guest-services efficiency procedures, and re-thinking operations. For example, design changes might include:

- re-examining the rental fee structure in light of speeding service,
- considering possibilities for greater degrees of self-service,
- re-locating the free-standing wicket away from the centre of the belvedere,
- having swimmers egress through some other space, and
- by defining queuing spaces by barriers, stanchions, or floor treatment.

The LSB is an open room with exits to the Cave and Longhouse. Visitors sometimes look puzzled about the best way to begin their tour of the building. The exits are not developed in terms of pedestrian movement and awkward crowding results. The bottom of the Longhouse entrance stairs is an area of particular congestion, perhaps needless.

The belevederes are the greeting areas of the Cave & Basin. They would benefit from further design attention in order to improve daily effectiveness. But improvements might be at a cost to the accuracy of the restoration.

OBJECTIVES FOR LSB

"2. 89% [will reach the LSB.]"

89% of visitors reached the LSB. [The matching figures of "89%" are not misprints.] The median length of visit was 5 minutes with half of the respondents staying between 3 and 10 minutes.

"11. 90%... will know that the Cave contains a thermal spring."

77% knew that the Cave contained a thermal spring because they correctly indicated to the interviewer that it was warm (not cool), came from a spring, and was heated by the earth.

Although the criterion — which was approved by the Cave & Basin management — is missed by 13%, it should be noted that respondents had to identify three components which defined a thermal spring. If a less demanding criterion were set, a higher percentage would result.

"12. 80%... will know... [discovery of the Cave] led to the founding of Canada's first national park."

Of those who entered the LSB, 46% were correct.
Of those who *did not* enter the LSB, 43% were correct.

The LSB experience does not materially improve scores on this question relative to prior information levels or information gathered elsewhere during the visit.

It is possible that interest levels in the natural phenomena depicted in the LSB overwhelm attention to historical information. Perhaps another exhibit located as centrally as the Hot Springs Model and configured as attractively would raise the percentage. Please see the following table for further information relative to this objective.

Each of the LSB exhibits had its admirers.

Hot Springs Model	38%
Trivision	29%
Discovery Mural	17%
"nothing"	[13%]
other	3%
	100%

N=198

There were only a few visitors who didn't like the LSB. Dislikes include:

"nothing	[89%]
dull/insufficient	6%
too crowded	3%
other	2%
	100%

N=160

THE CAVE

As a venue to serve people in comfort and safety, the Cave has a number of inherent drawbacks. These are largely arising from the physical constraints of *all* caves and some intentionally designed to achieve goals other than simple pedestrian effectiveness:

- the tunnel is limited in height and width,
- the lighting level is low,
- the pedestrian flow can not be made continuous but must be ebb-and-flow or in narrow streams sharing the same pedestrian path,
- the design heights for reaching the various water areas are imperfect,
- it is hard to establish separation of the fast-moving visitors from those who want to examine the site at a more leisurely pace, and
- the backdrops are of limited photographic utility being composed of rock formations in a limited range of colour and form.

For restorations, there is always the issue of historical accuracy versus state-of-the-art design. Many visitors want to take photos or to videotape in the Cave. However, there seems to be some difficulty in composing pictures and finding photographically good and dry perches for the photo subjects. The light from the hole may be disruptive at certain hours.

OBJECTIVES FOR THE CAVE

"3. 85% [will reach the Cave.]"

89% of visitors reached the Cave. The median length of visit was 5 minutes with half of the visitors staying between 3 and 6 minutes.

"52. 50% of visitors to the Cave will feel the water."

87% felt the water.

What did people find interesting about the Cave?

the geology aspect	44%
the authenticity	19%
"everything"	15%
various aspects of the water	12%
the smell	7%
other	4%
	101%

N=221

What did people find disagreeable about the Cave?

"nothing"	[58%]
smell	15%
too crowded	10%
tunnel roof too low	9%
other	8%
	100%

N=204

THE BASIN

Apparent from the data presented below, there are serious problems in the functioning of the Basin. Survey information is from the post-visit group and observational information is based on four 15-minute periods representative of the range of visitation.

OBJECTIVES FOR THE BASIN

"5. 45% [will reach the Basin.]"

61% of visitors reached the Basin. The median length of visit was 2 minutes with half of the visitors staying between 1 and 5 minutes.

"53. 50% of visitors to the Basin main deck will feel the water."

Of those who reached the Basin, 39% said they felt the water. However, direct observation showed that 36 of 205 people felt the water; that is 18% *of those who reached the Basin area*.

Two possible explanations for the discrepancy between recall and observation are the following.

(1) Individuals who did not feel the Basin water are more likely to

(a) fail to recall having been to the basin and
(b) not know that it was the Basin they were passing and thus the 39% figure is inflated from the truth, and

(2) since results of observations are not distorted by the natural human desire to appear "good" in various senses, the 18% figure is most likely closer to the truth than the 39% figure.

This objective is discussed below.

Of those who didn't feel the water,

- 45% feel it wasn't easily reachable,
- 42% felt it didn't look clean, and
- 13% had miscellaneous other reservations.

What did people like best about this area?

the authenticity	39%
good atmosphere	26%
"nothing, didn't particularly like it"	[22%]
the water	7%
other	7%
	101%

N=132

What aspects did people *not* like about the Basin area?

"nothing"	[59%]
maintenance and cleanliness	17%
smell	14%
other	10%
	100%

N=122

Despite the promotional significance of the Basin, only 11% of all those coming to the *Cave & Basin* feel the water in the Basin. Layout and sense of being unsanitary are main contributors to this low percentage. For some visitors it may be a let-down — like seeing an ancient religious relic: when it gets to be seen in person, it turns out to resemble just a piece of old cloth.

The water is 22 cm below the boardwalk surface. That represents a long reach for many people — particularly the very old and very young. There is a location where an easier reach is possible but the visitor must leave the boardwalk.

The boardwalk — a nice feature in many settings — may suggest an effort to separate people from some unsanitary condition below the boardwalk. Or it may remind people of docks built over dirty shores. Painting the boardwalk can improve this perception.

It may be beneficial to have a prominent sign indicating that the visitor has reached the Basin.

In the Basin area, visitors are not given clear orientation as to spots which visitors are welcome to traverse and spots which are "off-limits." Scaling the rock walls around the Basin is popular with kids but few may be sure whether or not it is permitted.

There are few signs around the Basin and none that relates to the Basin itself. The Basin should be identified with a prominent sign. Some orientation information or some encouragement to experience the Basin water first-hand would be helpful. It is recommended that signs be put in place.

A positive aspect of the Basin — as with the Cave — is that many visitors want to take photos there. However, there seems to be some difficulty in composing pictures and finding good (and safe!) perches for the photo subjects. Photo spots should be created. The Disney parks tell guests where good pictures can be shot.

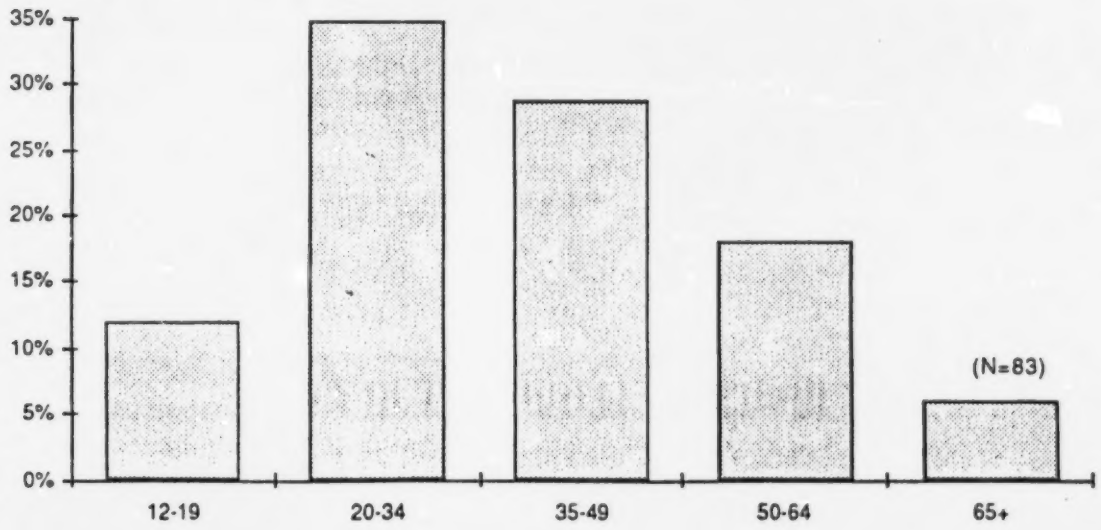
LONGHOUSE

The Longhouse is an exhibit hall on the second floor of the main building. It is filled with a variety of exhibits and information borne by a wide range of media. These media include multiple-slide shows, interactive computer displays, scale-models, and historic artifacts. Because of the importance of this area to purposes of the site, behavioural observations were conducted to note visitor reactions.

Six objectives specifically relate to the Longhouse. Other objectives which nominally relate to the Longhouse overlap with other areas or represent information so basic that it would not be safe to attribute knowledge gains to the Longhouse visit alone.

85 visitors were interviewed in the Longhouse, 45 men and 40 women. Because visitors leave from *either* end of the area, exit interviews were conducted at both ends, roughly in proportion to visitor frequencies as judged intuitively by non-quantitative observation. This reduced the likelihood that results would be influenced by having interviewers stop only east-to-west tourers (rather than west-to-east tourers). The ages of respondents are shown in the chart below.

AGES OF LONGHOUSE RESPONDENTS



Compared to the entire visitor age distribution, the Longhouse had 5% or so more teenagers and a like percentage fewer post-65 year olds. It was otherwise similar to the general visitor population.

OBJECTIVES

"4. 58% [of visitors will go to the Longhouse.]"

64% of respondents said they visited the Longhouse. The median visit was for 10 minutes with 50% of the visitors staying 5 to 15 minutes.

"14. 95%... will stop and look at at least one piece of exhibit material."

Visitors who entered the Longhouse averaged 12.4 minutes there (σ=8.7, N=151), with a median visit of 10 minutes.

"15. 90%... will know Banff was... the first national park."

89% of visitors to the Longhouse could answer this question correctly.

"16. 90%... will know discovery of the hot springs... led to founding."

Of visitors to the Longhouse, 53% knew this but 19% fewer among those who did not visit the Longhouse.

Apparently this fact is not stressed sufficiently strongly in the Longhouse and, based on results for other locations, not stressed successfully anywhere else.

"17. 80% will know that the first reserve was founded a century ago."

87% (58 respondents) knew this fact.

"18. 60% will know that attitudes toward... parks have changed over the last century."

In order to test whether visitors had substantive knowledge of changes, they were

asked to give one example of how attitudes have changed. 53% (42 people) were able to mention one correct example.

"20. 50% will know that Parks Canada protects natural and cultural heritage."

83% or 69 people knew this.

19. This objective was not covered.

"21. 80% will know that we are trying to expand...to all natural regions and historic themes."

88% (73 visitors) were aware of this.

REACTIONS TO THE LONGHOUSE

Respondents were asked about their likes and dislikes in the Longhouse.

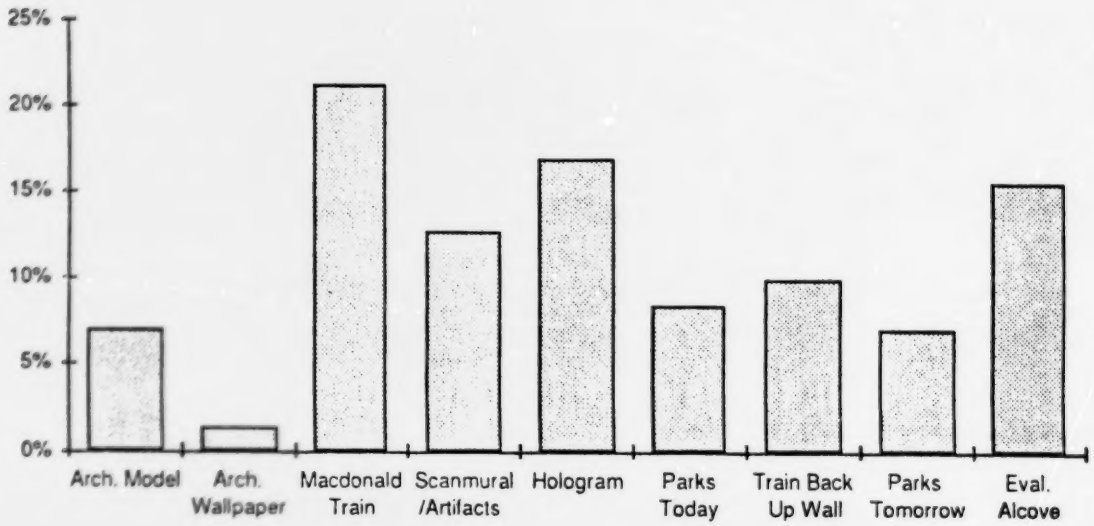
"Liked everything"	7%
Positive comment*	6%
Exhibits and Information	85%
Other	2%
	100%

N=84

* This category represents utterances which reflect general positive attitude without being specific enough to be coded.

Likes did not vary by age. A finer breakdown of those liking specific exhibits is shown in the following chart.

LONGHOUSE EXHIBITS "LIKED BEST"



The greatest approval goes to two exhibits which are visually striking but low on sustantive content — in the opinion of the researchers. Again, age did not relate to exhibit preference.

Dislikes were few.

"Nothing"	63%
Negative comment	8%
Criticism of specific exhibit*	23%
Other	6%
	100%

N=84

* No single exhibit was sufficiently singled out for criticism to merit a separate category of coding.

Thus one-third of individuals had negative remarks. Of these respondents, two-thirds mentioned problems with specific exhibits — sometimes mechanical/electrical in nature.

Despite the good public reaction to the Longhouse, close observation revealed a

number of problems. The points made below may not be representative of all conditions or even of typical conditions but they were observed by the study team during the periods of observation.

Regarding design —

- the personal letters and diaries might be erroneously construed as historical documents but identical material appears in both English and French; an explanation would clarify the nature of this exhibit,
- the controls to start the slide shows and to choose the language of narration are hard to understand with no acknowledgment signal; the signs should be re-written and an acknowledgment-of-request lamp should be installed,
- the single step at the entrance to the landing at the top of the exit stairs is extremely dangerous, many visitors were observed to trip. Single steps are discouraged by building codes. Staff should be encouraged to report any such hazards so they can be eliminated,
- the red dot on the building model is very difficult to find; a small dim lamp would make a better marker.

Regarding operations —

- some of the pilot lights in the slide show control buttons were burnt out and were not serviced within the period of observation,
- there was only one stool for the two stool-height quiz's,
- visitor suggestion forms stocks were not kept replenished.

Although it is a matter of judgment, the materials in the Longhouse tend to be short on factual content and long on Parks promotion. Of course, it is reasonable to suppose that the Cave & Basin is viewed as a fitting site to promote Parks. Information feedouts which are glossy in format but lacking content can be counter-productive — conditions which the Longhouse exhibits should strive to avoid.

SWIMMING AREA

A great many summer visitors — 20% — come to the Cave & Basin primarily to go swimming. For an additional number, even seeing the swimming pool is an important part of their visit.

Some 33% of respondents use the pool although some of these visitors indicate other factors as their primary reason for visiting. This may be compared to Objective 1 which stipulates 14% as a criterion. Parks personnel were heard to remark that the weather during the period of study was generally representative of that period of the year.

The median pool visit is 45 minutes with the inter-quartile range 30-60 minutes. One person reported they had been in the pool area for three hours.

The swimming pool — apart from the locker rooms — is liked for:

the warm water	38%
the design of the facility	20%
maintenance and cleanliness	17%
other*	17%
the view	5%
because it is good for children	3%
	100%

N=64

* This category includes a variety of comments, none of which is repeated sufficiently often to merit individual statistical treatment.

But annoyances include:

"nothing"	[60%]
safety problems*	22%
other**	12%
kids	6%
	100%

N=50

* Detailed safety perceptions were not collected.
** This category includes a variety of comments, none of which is repeated sufficiently often to merit individual statistical treatment.

Because locker-rooms may be perceived differently by men and women and because they serve uni-sexual cohorts, men's and women's responses were considered separately. In terms of *likes*, the locker rooms are viewed differently by men and women (χ^2=10.0, p<.02, df=3).

	men	women
maintenance and cleanliness....	52%	30%
the design of the facility.....	7%	41%
general positive comments*.....	19%	22%
"nothing".....	[22%]	[7%]
	100%	100%
N=	27	27

*** This category includes utterances which were not specific enough to be coded separately.**

For dislikes, men and women do not differ with statistical significance (χ^2=5.1, p<.16, df=3) but the results are illuminating.

	men	women
too crowded.....	52%	52%
"nothing".....	[28%]	[10%]
maintenance and cleanliness....	9%	23%
the design of the facility.....	9%	16%
	98%	101%
N=	32	31

There is variation among the sample in their dislikes depending on the hour at which they were interviewed (χ^2=23, df=12, p<.03). 10% of those interviewed before 1300 complain about crowding. But between 1630 and 2030, more than 80% mention crowding as a dislike in the locker rooms.

Visitors were asked what they felt would be a convenient opening hour. No one wanted the pool to open any later than 10:00. One person thought 6 am would be a convenient hour. The average response was 9:27 (median = 10:00) with 50% being satisfied between 9 am and 10 am. However, some 10% would like an 8:00 or earlier opening.

For a convenient closing hour, the average response was 20:45. The median preference was 20:00 with an inter-quartile range of 20:00 to 22:00

OBJECTIVES

There are three objectives related to the swimming area. The first is "Objective 1" relating to volumes of visitors which was discussed at the beginning of this chapter. The second relevant Objective, C7.1, specifically as it relates to reactions to the swimming area (already discussed) and to water temperature.

When asked about water temperature, 8% found it "too warm," 21% found it "too cool," and 71% found it "OK." Men and women had precisely the same percentages.

The third objective, number 58, set 20% as the number of visitors who will rent and wear 1914-type swimsuits. Figures supplied by Parks indicate that 3.2% of swimmers rented the historic suits. These suits are not promoted or displayed. Help in estimating proper size of suit is not presented. Interested visitors are obliged to take the time of the attendant and thus further dismay those waiting in line behind.

The design of the pool and locker rooms is constrained by the need to be historically true to the building. The locker rooms are modern but located in the same areas as the original change rooms. The wheelchair-user change locker room has been added; it is discussed in a later chapter.

All things considered the locker rooms work well but could be improved. There are always some faults which come to noticed after a building opens:

- the large towel bins are awkwardly placed at the locker room entranceway; smaller bins located elsewhere would be an improvement,

- the maintenance closets are needlessly signed with an obscure pictograph; extraneous signs reduce the effectiveness of important signs — a replacement sign pointing to the route to the pool would be more helpful on this door,

- the diaper disposal is not identified,

- people are often confused about "the rules" for using the locker rooms and even where to find the pool; a sign pointing to the pool door would be helpful.

As with many aspects of the Cave & Basin, more staff in routinely assigned contact with visitors would be beneficial. This failure to assign and/or manage staff is reflected in the following observations made by the study team:

• water accumulates on the floor and should be swabbed more often and capital improvements to drainage should be priced,

• empty soap bottles should be refilled with greater frequency,

• feces on the floor of a change stall was called to the attention of a study team member by a visitor; despite being reported to pool staff, no effort was made to clean it up; this filth remained visible for two hours until eroded and dispersed by movements of visitors using the change stall,

• two of twelve coathooks were broken,

• neither of the two handles on the poolside water fountain was in place or working resulting in no water service for swimmers.

Some swimmers would like to dry their suits and then put them on again to sun bathe or to leave the swimming premises. This is only possible when a wringer is in the locker room. The installation of a swimsuit wringer in the public exit area to the east of the pool prevents this.

A wringer within each locker room would be beneficial. Retaining the existing wringer (on the common egress path) would be an amenity whose value should be judged in relation to the cost of wringers and to the unsightliness of the mounting holes which will be left after the present wringer is relocated to one of the locker rooms.

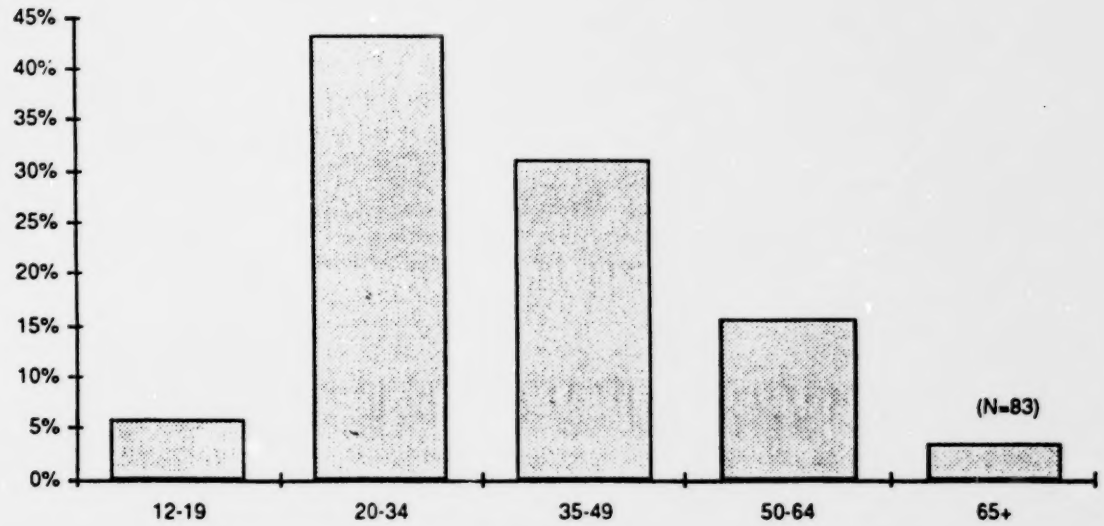
MARSH TRAIL

The Marsh Trail runs from the North Wall Walk to the marsh and river areas. It is comprised of a boardwalk built partly over solid ground and partly over shallow water, bi-bisected by a horse trail. Among the objectives were ten (8, 28-33, 54-56) specifically relating to the Marsh Trail.

Behavioural observations were conducted on the trail in three areas to observe use of telescopes, the bird blind, and the fish observation pier. Four 15-minute observation periods were devoted to each objective. The periods were selected to be representative of the temporal cycle of visitation. These correspond to objectives 54, 55, and 56.

42 men and 41 women were interviewed as they left the Marsh Trail. Their ages are shown in the chart below.

AGES OF MARSH TRAIL RESPONDENTS



Relative to the entire group of visitors, Marsh Train users are over-represented in the 20-34 year group by about 10% and under-represented in the post 50 groups by about 5%.

OBJECTIVES

"4. 15% [of visitors will visit the Marsh Trail.]"

18% of respondents said they visited the Marsh Trail. The median visit was for 20 minutes with 50% of the visitors staying 15 to 30 minutes.

"28. 90% of visitors who have walked the lower trail system will know that the hot springs water changes the surrounding environment."

82% (66 people) were able to correctly name one of a variety of changes.

"29. 80% will know that the hot springs water remains unfrozen through the winter."

Only one person (1.2%) incorrectly thought the spring freezes in the winter.

"30. 50% will know that the Banff longnose dace lives in the outflow and is rare and endangered."

75% (62 people) knew that rare or endangered species live in this water. 40% (23 people) could identify the fish.

"31. 50% will know that the warm water keeps some plants green all winter."

77.4% (65 people) were aware that some plants stay green all winter.

"32. 40% will know that a few birds...stay.... [through the winter]."

77% (65 people) did know that.

"33. 80% will know that the area is fragile."

93% (78 people) knew that.

"54. 70%... will use the telescopes."

Over the course of an hour of daylight visitation, 24 of 45 visitors were observed using the telescopes. That is 53%. It may be that an insufficient number of people know that the telescopes are free and so greater promotion of that fact would be helpful.

A design with more consideration of human-factors — height, strength, ease of use of controls — would lead to more, longer, and easier use by a greater range of visitors.

"55. 70% of visitors to the Bird Blind... will look for [water] birds."

Only visitors who looked for birds through the eye slots were deemed to be "using" the bird blind. In one hour, 22 of 36 visitors looked for birds — 61%.

"56. 70% of visitors to the fish viewing deck will look for fish."

In one hour, 28 of 38 visitors, 74%, looked for fish from the viewing deck.

REACTIONS TO THE TRAIL

Respondents were asked about their likes and dislikes on the trail.

"Liked everything"	6%
Positive comment*	23%
Exhibits and Information	7%
Storyline, layout or pattern	18%
Good contact with nature, eg. fish	42%
Other	4%
	100%

N=83

Likes did not vary much with age or sex.

Dislikes included the following:

"Nothing"	50%
Negative Comment	7%
Natural problems, eg. mosquitos and smell	22%
Other	21%
	100%

N=82

Thus half of individuals had negative remarks. Of these, half objected to natural features inherent in the trail and thus largely beyond Parks control.

To observers, there appears to be a "better class" of visitor to the Marsh Trail than the average visitor elsewhere at the Cave & Basin. They were "better" in the sense of being more interested in nature and had greater perseverance for experiencing the site. There is a natural selection of hardier or more interested people at work due to the arduousness of the trail. There seemed to be somewhat fewer individuals among the respondents interested in brief and superficial contact with the media.

The trail media worked reasonably well as indicated by the generally quality answer to factual questions. However, from the brevity of use of the telescopes on the part of many visitors, it may concluded that more people peeked into the 'scopes for curiosity than used them in an effort towards nature watching.

Lack of visible staff in public parts of the facility was a management failure commented on by visitors, reflected in a large number of instances of visitors looking perplexed, and sensed by the observers. It resulted in the following consequences as on the Marsh Trail. For example, an unwholesome object — a snake cadaver or animal feces — lay on the boardwalk un-removed by staff for several days. No staff member was ever observed on the Marsh Trail in the course of the study team's assignment there. Regular inspections by staff would prevent such instances.

DISCOVERY TRAIL

The Discovery Trail runs south from the main building and up the mountainside. It is a boardwalk and includes:

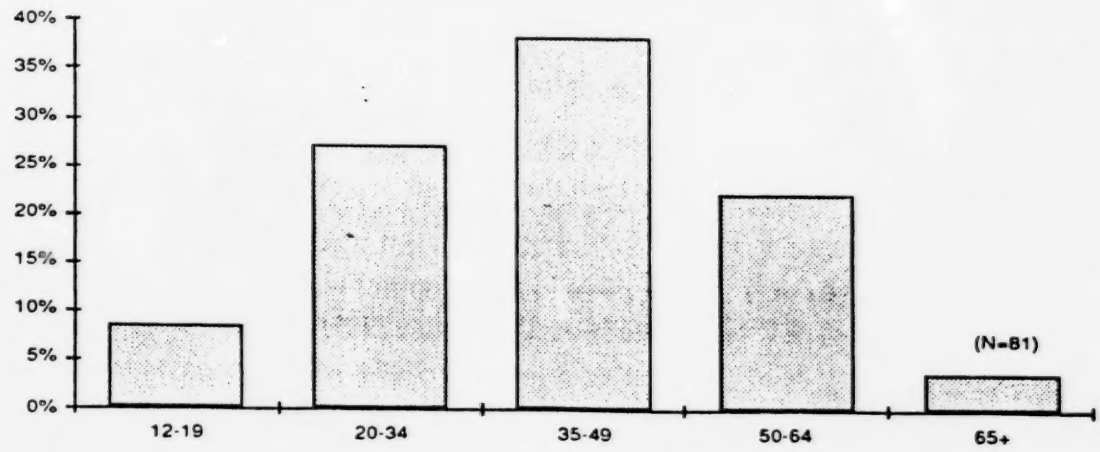
- the hole through which the "discoverers" entered the cave,
- a pool,
- a limestone boulder which gives off a sulphur smell if struck hard enough to break-off a piece, and
- numerous outcroppings of tufa.

Among the objectives were seven (7, 22, 24-27, 57) specifically relating to the Discovery Trail and not covered elsewhere.

Behavioural observations were conducted on the trail to observe use of the "scratch and sniff" boulder. This corresponds to objectives 57.

38 men and 42 women (and one person not identified by sex) were interviewed as they left the Discovery Trail for a total of 81. Their ages are shown in the chart below.

AGES OF DISCOVERY TRAIL RESPONDENTS



The age distribution resembles the general visitor age profile with a few percent more teenagers and a few percent fewer old people visiting this trail.

OBJECTIVES

"7. 15% [of visitors will go to the Discovery Trail.]"

29% of respondents said they went to the Discovery Trail. The median visit was 15 minutes with half the group staying 10 to 20 minutes.

"22. 80%... will know that the original 'discoverers' used the vent...."

78% (62 people) knew that fact.

"23. 80%... will know discovery of the hot springs... led to founding...."

86% of those on the Discovery Trail were correct about where the parks began and 50% were correct about why.

"24. 70% will know [why] the water is hot...."

68% (54 people) knew that the water is heated deep in the earth's crust.

"25. 70% will know that the smell is caused by the sulphur in the water."

94% (76 people) where correct about the sulphur smell.

"26. 40% will be able to point to an outcropping of tufa that has been pointed out to them by one of the trailside media."

Because interviewing was done as visitors exited the trail — rather than in proximity to a tufa-related sign — pointing to *any* tufa was considered an acceptable answer. 54% of respondents, 43 individuals, were able to correctly do so. A block of tufa was moved to a spot adjacent to the interviewer for the convenience of visitors. It was replaced to its normal station afterwards.

"27. 50% will know that the sulphur springs were thought to have marvelous healing properties.

"98% (78 people) knew that.

"57. 70%... will use the scratch 'n sniff boulder."

In one hour, 18 of 46 visitors, 39%, manipulated the spike in order to smell the sulphur.

The spike is not mounted at a height to be visually prominent. Some people might be hesitant about hefting the rusty-looking spike. Often the spike hangs behind the boulder. A certain number of visitors notice others in their group (or un-related visitors) who can't smell the sulfur and thus don't bother trying to smell it for themselves.

REACTIONS TO THE TRAIL

Respondents were asked about their likes and dislikes on the trail.

"Liked everything"	14%
Positive comment	10%
Exhibits and Information	45%
Storyline, Layout, Or Pattern	22%
The View	9%
	100%

N=78

Likes varied somewhat by age (χ^2=26.9, p<.04, N=78). Young adults, 20-34, liked the exhibits somewhat less and the view somewhat more.

Dislikes were as follows:

"Nothing"	49%
Negative Comment	15%
Natural Problems, eg. Mosquitos and smell	28%
Other	8%
	100%

N=67

Thus half of individuals had negative remarks but with no single aspect mentioned prominently. Of these negative comments, half objected to natural features inherent in the trail and thus largely beyond Parks control.

The trail media worked reasonably well as indicated by the generally high quality of answers to factual questions. However, it looked like not many people were experiencing a sniff of sulphur from their scratching efforts at the naturally impregnated limestone boulder and this should be deemed an undesirable condition. It is detrimental to public relations to have an exhibit which few visitors can successfully use.

THE PAMPHLET

An attractive, full-colour pamphlet about the Cave & Basin is available to guests. Various objectives related to the pamphlet (and not examined in any other chapter of this report) were measured.

First of all, 49% of respondents took a brochure. There were no appreciable differences with age but only a third of teenagers seem to pick up pamphlets. The remaining data in this chapter relates their reactions.

Readers average 5.8 minutes "spent reading it" (σ=4.4, N=52). The longest attention it received was 20 minutes and the middle 50% was 2-10 minutes. Some 81% found the pamphlet useful and 19% did not.

When asked what they liked best about the brochure in an open-ended question,

- 55% were generally positive but not specific,
- 29% mentioned the old pictures, and
- 17% liked the map.

OBJECTIVES

"37. 100% will find it easy to read and comprehend."

Visitors were asked, "Did you find it easy to understand?" 94% said "Yes," and a further 2% were mixed in their answer.

"38. 100% will find it interesting."

94% reported that it was interesting and a further 6% were mixed. But no one said it was not interesting.

"40. 20% will find the map useful."

49% used the map.

"41. 100%... will know discovery of the hot springs... led to founding...."

Of those who took pamphlets, 91% knew where the national parks began and 54% knew why.

42. This objective was omitted.

"43. 80% will be able to use the diagram to explain the workings of the spring."

63% were able to successfully use the map to explain the workings of the spring.

Without specific media tests, it can not be accurately stated what aspect of the map might be improved to bring the success rate higher. However, it can be suggested that plainer colouring and clearer instructional graphics might be helpful — at some damage to æsthetic values.

44-47. These objectives were omitted.

ACCESSIBILITY OF THE CAVE & BASIN TO MOBILITY-IMPAIRED VISITORS

As part of the re-building of the facility, access for mobility-handicapped visitors was improved. In order to gauge the effectiveness of access, a brief questionnaire was designed for application to handicapped visitors.

Twenty-five handicapped visitors were interviewed in the period of field work. 13 were men, 10 were women and two weren't identified by sex. These respondents were largely older adults with 8 of 23 passed 65 years of age

All came with others. The typical group was 3 to 5 but up to 70 was mentioned as group size. 11 respondents had pre-teenage children with them. By and large this is a group of wheelchair users but includes about 5 poorly ambulatory visitors with muscular-dystrophy.

Their reasons for coming to the Cave & Basin were as diffuse as for the other visitors and quite similar. Their likings were favourable too. Some did mention the good accessibility of the site — in fact, one visitor mentioned the claim of accessibility found in the pamphlet.

All main areas were mentioned by someone as "liked best..." with the trails and Longhouse being mentioned especially often. More than one respondent praised the attitude of staff.

Were there locations which handicapped respondents found "easy to visit" in view of their problem? Some 10 visitors said "everything." The Cave was mentioned by 7 respondents and the Longhouse by 4.

General dislikes in the course of visiting were interesting. Twelve said there was nothing they didn't like. But four were disappointed to find the site not totally accessible.

The dislikes included:

- going between the non-handicapped-persons' locker room and the pool deck,
- scarcity of general signs,
- scarcity of access signs,
- insufficient numbers of change stalls in the non-handicapped-persons' locker room,
- insufficient accessibility.

The areas mentioned as difficult to visit include:

- the ramp to Discovery Trail,
- the theatre,
- the Cave,
- the Longhouse,
- the change rooms.

... but 12 visitors said that nothing was difficult to visit for them.

Were any areas *impossible* to visit? 18 visitors said nothing was impossible for them to visit — quite an endorsement.

The only area mentioned with any frequency was the north end of the Marsh Trail which is reached by descending steps to the fish observation pier. However, a number of respondents graciously qualified their remarks by adding that nothing *they really wanted to see* was totally inaccessible.

The results of the previous paragraphs indicate that handicapped visitors:

(a) seemed to have visited all around the site,
(b) were fully cognizant of the care and forethought devoted to mobility access by Parks authorities — and the single (Marsh Trail) lapse from ready accessibility, and
(c) responded not unlike non-limited visitors

Observations were conducted in areas of special concern to people in wheelchairs. Staff response time to serve handicapped visitors was checked. Reaction time to the inclinator bell was between 30 and 120 seconds in three tests. When the pool attendants were responsible for service, time was shorter. However, it should be noted that office staff reacted very quickly but their travel time to the inclinator was much further.

Reaction time to the wheelchair change room signal was tested twice. Staff did not respond to the request for help. This was due to an electric fault which had not been identified until the time of the test. Needless to emphasize, a call for help from a lonely change room can be extremely serious and even signify a risk to the life of the caller.

In the experience of the contractor, handicapped facilities at the Cave & Basin are very good. Meriting particular praise are the change room facilities which could serve as a model of good design.

In context, it should be noted that no person was ever seen using the special locker rooms in about 12 hours of surveillance. Handicapped people favour integrated facilities and accept "separate but equal" treatment as a second-best design alternative. Moreover, the layout and signing of the locker room corridor is poor being a long narrow dead-end corridor. The lighting, relative to the typical swimming-weather state of visual adaptation to bright sunlight, is much too dim.

In summary, as found in other researches in Canadian parks, the visiting public tend to be favourable to their experience. Moreover, in the not inconsiderable experience of Behavioural Team in working with handicapped people, they also tend to be favourable unless that is terribly inappropriate. However, a perusal of the answers given in this chapter show an appreciation and liking for their visits which reflects extremely well on the designers and management of the Cave & Basin.

TRAFFIC COUNTER CORRECTIONS

It is very easy and quite accurate to count people "by hand." But it demands a lot of manpower to do so. If stats are needed on pedestrian traffic, an optimized sampling using human counters may be appropriate. But for daily record keeping, machines are relied on.

Is it easy to count people by machine? It is easy enough to build a mechanism which increments a counter whenever a lightbeam is crossed. But how does such a mechanism correctly count (a) two people walking side by side, (b) a great mass of people with no lightbreaks between them, (c) the separate legs of a tall person or (d) a child shorter than the height at which the beam is mounted? A simple, one-beam device can't tell whether people are *coming* or *going*.

Behavioural Team tried to validate seven indoor counters by comparing the mechanical tally with a human tally. Human counters can be quite accurate and, under the motivational circumstances of the test, it is assumed that the human counter was performing well.

[In the following text, "counter" will refer to a *mechanical counter* unless otherwise indicated.]

There are two primary approaches to correcting a group of counters. One can either develop a correction model which applies to all or one can provide corrections which apply each individually, a sort of hand-tuning. If all the counters are "fooled" in the same way and to the same degree, then it is simpler to routinely apply a single formula than to put unwarranted faith in the differences among correction formulæ arising from the test.

The traffic counter sites studied are:

1. the "link" between the Lower South Belvedere and the swimming area turnstiles, a corridor which includes a toilet and which sometimes serves as a play area for kids,
2. the Lower North Belvedere concourse entrance,
3. the door to the bathhouse,
4. the Longhouse entrance (on the bridge),
5. the Lower South Belvedere concourse entrance,
6. midway along the tunnel into the Cave,
7. the Longhouse exit, mounted above the next to the last step at the top of the stairs leading to the Basin.

Below is a table showing some relevant variables. The counts are per hour and the measurements are in centimeters.

- v1 human count total for both directions of walking,
- v2 mechanical count,
- v3 human count for people going in a direction which would be conventionally called "in,"
- v4 human count for people going in a direction which would be conventionally called "out,"
- v5 minimum width of the pedestrian passageway — a figure which tends to be right at the counter mounting location,
- v6 height of the counter above the perpendicular walking surface.

	Cave (46)	LNB (48)	Link (49)	LH exit (50)	LSB (51)	LH entr (56)	Film House (61)
human	396	167	157	251	855	390	194
mech.	534	237	201	517	824	367	200
mult. regr.	334	201	168	341	861	308	202
recomm.	347	154	131	336	824	367	200

(Numbers following site names represent heights of counters in cm.)

Observations were conducted for one-hour periods during medium-heavy crowding. Except for the actual reading of counters before and after the counting period, observations were unobtrusive.

The degree of crowding does inter-act to some degree with counter accuracy. But "biasing" observations towards heavier visitation periods is logical in that inaccuracy during light periods is not of much practical consequence.

RESULTS

The total human count and the mechanical count correlate about .90 over the seven observations. An equivalent way to express this statistic is to say that the two measures have "82% of their 'component parts' in common." Thus for many purposes, the mechanical tally should be considered close enough to the truth without needing correction.

An examination of the data indicates that the three counters mounted at a height of 51 cm or more tend to be within a few percent of correct. The four counters at lower heights

grossly overestimate. If these four counters are corrected by multiplying their count by .65, then close results ensue.

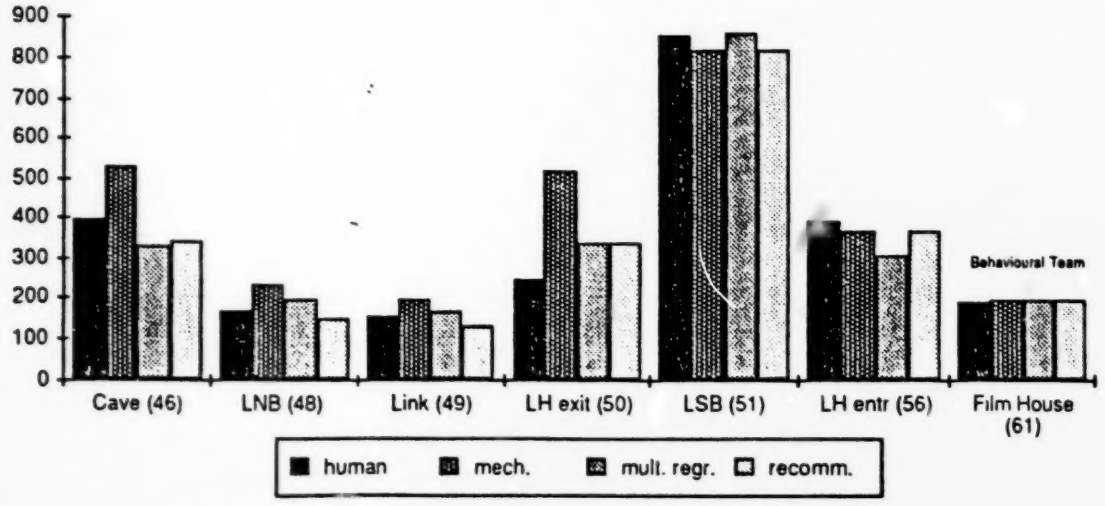
Thus a simple dual correction procedure is recommended:

1. if the counter is at 51 cm or higher, use the reading,
2. if the counter is lower, multiply the reading by .65.

The following table and chart show the outcomes of several ways of estimating the true figures from available information. Shown in the table are:

1. the human count,
2. the mechanical count,
3. a multiple regression estimate based on -
    a) the mechanical count,
    b) the height of the counter lightbeam,
    c) the minimum width of the passageway,
    d) the square root of the mechanical counter,
    e) a zero-intercept model,
4. the recommended dual correction procedure.

COMPARISON OF ALTERNATIVE MEANS OF ESTIMATING PEDESTRIAN VOLUMES



As an alternative to the dual model presented above, Parks authorities could simply use a ratio of the human count for each site divided by the mechanical count.

The individual correction factors are:

Cave	LNB	Link	LH exit	LSB	LH entr	Bathhouse
.74	.70	.78	.49	1.04	1.06	.97

Within the context of this study, it is hard to prove whether the "individually hand-tuned" correction is any more or less trustworthy than a general model of correction. However, the general model can be applied to new counter sites and represents a simple but general approach.

From the information in this chapter, it may be concluded that mechanical counters which are mounted lower than 51 cm are often reading legs, not torsos. For every 100 pedestrians, 56 are counted leg by leg. But the seven counters which were studied do not constitute a very sound foundation on which to build a general model of mechanical counter performance.

The traffic counter studies reported here were created in order to examine the relationship of mechanical counts to "true" counts. However, another aspect of using mechanical counters is to take the recorded count and estimate the number of visitors going in a given direction — for example, number of visitors *entering* a trail. To do so requires extensive sampling because the rhythms of the day and the weather influence the *in:out* ratio for many counter sites and so detailed knowledge of visitor patterns is needed for these sites.

The one-hour traffic sampling specified in the *Planning Report* was implemented mid-day on warm afternoons. Only limited confidence can be placed on the representativeness of this data for purposes other than the original intention of providing correction factor(s) for the counters.

The percentage proceeding in the conventional direction (or *in* if there is no conventional flow) are as follows:

LNB	LH exit	LH entr	LSB	Bathhouse
.49	.72	.68	.61	.68

The Cave counter is always 50:50 and the Link results are variable to an extreme degree.

APPENDIX A

INDEX OF OBJECTIVES

INDEX OF OBJECTIVES

POST-INTERVIEW	LOCALE	BEHAVIOURAL OBSERVATIONS	OMIT
1			
2			
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INDEX OF OBJECTIVES (CONT.)

POST-INTERVIEW	LOCALE	BEHAVIOURAL OBSERVATIONS	OMIT
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		54	
		55	
		56	
		57	
			59
60.1, 60.3, 60.4			60.2
C1			
C2			
C3			C3
			C4
			C5
			C6*
C7.1			C7.1
			C7.2
			C7.4
C8			

Some objectives are quite similar to one another. These were not duplicated in the interviews. Omitted objectives signified by "*" are covered by roughly overlapping items.

48-51 orientation sign questions are omitted in favour of other, higher priority issues.

58 will be completed internally by examining sales records.

59.1, 59.2, and 60.2 questions removed at suggestion of SEID, 59.3 deemed resistant to trustworthy measurement.

C3 doesn't cover visits to the Tea House.

C7.3 relates to handicapped visitors and was treated as described above. C7.4 omitted in favour of higher priority issues.

All omitted objectives are by authorizations of Cave & Basin management.

APPENDIX B

COPIES OF SURVEY INSTRUMENTS

July 28

Behavioural Team, A Corporation

POST-VISIT INTERVIEW

DATE_____ TIME_____ M_____ F_____

[Use rehersed solicitation - assure that we are not "testing" them.]

What time did you arrive at the C & B? _____

What is your place of residence? _____

Including yourself, how many people are in your group today? _____ {probe categories}
21+_____ , 12-20_____ , ambulatory-11_____, infant in stroller_____

Including today, how many times have you been to the Cave and Basin area? _____

Why did you decide to visit the Cave and Basin today?

_____

Can you tell me what you liked best about your visit today? {Probe reasons}

_____

Can you tell me anything that you didn't like during your visit today? {Probe reasons}

_____

Did you take a brochure? {Show brochure} y[ ] n[ ]

Have you read it... About how many minutes have you spent reading it? _____

Did you find it easy to understand? y[ ] n[ ] mixed[ ]

Was it interesting to you? y[ ] n[ ] mixed[ ]

Was it useful to you? y[ ] n[ ] mixed[ ]

Did you use the map? y[ ] n[ ]

On this card, can you point to the spot where the water gets heated? y[ ] n[ ] dn[ ]

What features did you like best in the brochure? {Probe reasons}

_____

Did you go into the swimming pool area? y[ ] n[ ]

How long were you there? _____

What did you like best about the swimming or locker-room areas? {Probe reasons}

SW:_____

LRoom:_____

Can you tell me anything that you didn't like? {Probe reasons}

SW:_____

LRoom:_____

What would be a convenient opening hour? _____ {Code only hr AM and decimal}

What would be a convenient closing hour? _____ {Code only hour PM and decimal}

Was the water OK? Was it too... warm[ ] cool[ ] OK[ ]

Were you in that room [LSB]? y[ ] n[ ]

How long were you in there? _____

What exhibit did you like best in there? {Probe reasons}

_____

Can you tell me anything that you didn't like there? {Probe reasons}

_____

Did you enter the Cave? y[ ] n[ ]

How long were you in there? _____

What did you find most interesting? {Probe reasons}

_____

Can you tell me anything which hindered your enjoyment in there? {Probe reasons}

_____

What is in the cave? {Probe: warm or cool water, source of water, source of heat}

_____

Did you put your hand into the water? y[ ] n[ ]

Did you go upstairs to the long exhibit room? y[ ] n[ ]

How long were you there? _____

Did you stand right next to the outdoor natural rock basin pool - near the Tea House and slide show theatre? y[ ] n[ ]

How long were you there? _____

What did you like best about that spot? {Probe reasons}

_____

Can you tell me anything that you didn't like? {Probe reasons}

_____

Did you put your hand into the water? y[ ] n[ ]

if no, Why?_____

Have you walked along <u>that</u> [north wall walk] path? y[ ] n[ ]

Did you take the trail [Discovery] above the building? y[ ] n[ ]

How long were you there? _____

Did you start to walk along the trail [Marsh] which leads down to the water? y[ ] n[ ]

How long were you there? _____

Can you tell me <u>where</u> Canada's first national park was established?

_____

Can you tell me <u>why</u> Canada's first national park was established?

_____

Was this Centennial Centre built for the Centennial of <u>Canada</u> or the centennial of the <u>national Parks system</u>? Can [ ] Parks [ ] dn [ ]

Do you have any plans to visit the Cave and Basin again? y[ ] n[ ] dn[ ]

Would you say your visit here today was comfortable?...was the visit was worthwhile?...
did you enjoyed yourself? comfortable [ ] worthwhile [ ] enjoyable [ ]

Finally, do you have any suggestions for improvement which might be considered by the management of this park
area?_____

{Show age card} _____

July 28 — Stats Can Registration #R6088-3

Behavioural Team, A Corporation

LONGHOUSE INTERVIEW

DATE_____ TIME_____ M____ F___

[Use rehersed solicitation - assure that we are not "testing" them.]

1. Can you tell me what you liked best about this room?

_____

2. Can you tell me anything that you didn't like in visiting this room? {Probe reasons}

_____

3. About how many years ago was the first park established here? _____

4. Can you give one example of how Canadian attitudes toward public parks has changed in the past 100 years?

_____

5. To the best of your knowledge, is Parks responsible for protecting the natural heritage of Canada and the cultural heritage of Canada? y[ ] n[ ] dn[ ]

6. Is Parks trying to cover all the natural regions and historic themes of this country? y[ ] n[ ] dn[ ]

7. {Show age card} ____

July 28

Behavioural Team, A Corporation

MARSH TRAIL

DATE_____ TIME_____ M____ F___

[Use rehearsed solicitation - assure that we are not "testing" them.]

1. Can you tell me what you liked best about this trail? {Probe reasons}

_____

2. Can you tell me anything that you didn't like in visiting this trail? {Probe reasons}

_____

3. Can you tell me any way in which the warm water has changed the environment here?

_____

4. Does the spring freeze in the winter? y[ ] n[ ] dn[ ]

5. Are there any rare or endangered species of fish in this water? y[ ] n[ ] dn[ ]
   I know it is a difficult question, but can you name any endangered species of fish?
   _____

6. Do any of the plants stay green all winter here? y[ ] n[ ] dn[ ]

7. Do any of the birds which normally migrate south stay here through the winter? y[ ] n[ ] dn[ ]

8. Is this considered an environmentally "fragile" area? y[ ] n[ ] dn[ ]

9. {Show age card}

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Behavioural Team, A Corporation

DISCOVERY TRAIL

DATE_____ TIME_____ M____ F___

[Use rehersed solicitation - assure that we are not "testing" them.]

1. Can you tell me what you liked best about this trail? {Probe reasons}

_____

2. Can you tell me anything that you didn't like in visiting this trail? {Probe reasons}

_____

3. How did the "discoverers" get into the cave?

_____

4. Why is the water hot?

_____

5. What causes the smell coming from the water?

_____

6. Can you point to an outcropping of tufa? y[ ] n[ ] dn[ ]

7. Is it true to say that people originally thought that these springs had marvellous healing powers? y[ ] n[ ] dn[ ]

8. {Show age card.}_____

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Behavioural Team, A Corporation **CAVE AND BASIN INTERVIEW**

ACCESSIBILITY SURVEY

DATE_____ TIME_____ LOCATION_____ M____ F____

[As per Parks request, mobility limitations only, incl. elderly if appro, but not pregnancy. Use rehersed solicitation.]

Including yourself, how many people are in your group today? adults_____ children 11-_____

Why did you decide to visit the Cave and Basin today?

_____

Can you tell me what you liked best about your visit today? {Probe: reasons}

_____

Can you tell me anything that you didn't like? {Probe: reasons}

_____

In view of your {use of a wheelchair, dependance on a cane, ...), what locations within the Cave and Basin area did you find easy to visit {probe: and/or enjoy}? {Probe for details}

_____

What locations were difficult to visit {probe: and/or enjoy}? {Probe for details}

_____

What locations did you find impossible to visit? {Probe for specific problems}

_____

Do you have any further observations about accessibility here?

_____

{Show age card} _____

Limitations (interviewer fills-in)

Describe functional limitations_____

acute (< 1 yr) handicap[ ] chronic handicap[ ]

Human assistance present _____

Tech/mechanical aides present [eg leg braces, wheel chair...]_____

APPENDIX C

FIELD MATERIALS

CAVE & BASIN SUMMATIVE EVALUATION
INTERVIEWER TRAINING WORKSHOP

3:00 **Introduction**

- Introducing the Team... Reporting Lines... Work arrangements
- The Context of the Survey
- The Role of the Interviewer
- Study and Trial Interviews
- What to Wear
- Dealing with Problems

3:15 **The Survey Entry**

- The Issues and How to Cope
- Sticking to the Sampling Strategy
- Increasing Your Response Rate
- Answering Questions
- Practise

3:30 **Skills**

- Asking Questions
- Listening and Recording Skills
- Probing

3:45 **The Interview**

- Setting-Up
- Sticking to Your Respondent
- Staying on Track
- Concluding the Interview

4:00 **Practise and Pilot Tests**

- Reviewing the Survey
- Pilot Tests

6:00 **Re-Convene for Feedback Session**

6:30+ **Conclusion of Workshop**

Behavioural Team

Behavioural Team, A Corporation
164 Eglinton Ave E, ste 505, Toronto M4P 1G4, (416) 482-5131
July 24, 1986

INSTRUCTIONS TO INTERVIEWERS

Dress neatly, even formally. Looking like you are working (rather than a visitor) will actually help you get volunteers. Have good eye contact with the respondent but faithful recording of answers on the sheets is the first priority.

Our main purpose is to quickly collect lots of interviews — within reasonable bounds of courtesy. Always address the respondent formally - we use Ms. for women, unless corrected by the respondent

It may sometimes be necessary to interrupt a respondent - do this carefully with words like "Excuse me for interrupting. These points are very interesting and I have noted them. I would like us know to return to the question of BLANK. Re state question or move onto next one.

Read the interview aloud until you feel comfortable with the words and phrasing.

Square brackets, [and], are for your information, not to be spoken to the respondent.

Probes are used when the person has not answered the question as fully or as close to our requirements as needed. In fact, they indicate to you the classes of answers we are looking for. They are lines of inquiry which lead into further clarification by the person; don't lead but do raise the issues in the probes

When there is a fill-in space right after a question, record the answer. If there is no fill-in directly below the question, then read the alternatives aloud to the respondent.

Remember two things

(1) keep your eye on the codes! - work towards clarifying your specific survey information needs,

(2) do not say anything substantive besides a slight re-phrasing of the question - this can result in leading the respondent in one direction or another. In the questions where you are to read the alternatives to the respondent, the alternatives are included as part of the question.

You may find some of the question wording awkward. But do your best with the wording. On the other hand, within limits, you can re-phrase the solicitation and ancillary gab to your own liking.

Recording your answers

In this interview there are two kinds of questions - open-ended and close-ended. In open-ended questions, you must write down the full response. Verbatim recording of the essentials of the response is required. Don't hesitate to use phrases like "Please bear with me. It is important that I write down quite exactly what you are saying." As the respondent is speaking, review in your mind the pre-defined codes found below the question. If appropriate, probe the respondent's answer if you find it does not fit into any coding, or you are not sure quite what it means.

Immediately at the end of each interview, you must review each open-ended question and code them before turning to the next person.

In close-ended questions read the alternatives to the client.

Questions you may be asked

A. Just what is this study? - rephrase the solicitation

B. Who can I talk to at Parks about this? - Alison Manley, Manager

C. Can I get a copy of the report? It is being done for Ms. Manley. I don't know if or when it will be made public

D. Will my answers be known? Parks will never even know which individuals took part in this study. We take great care to maintain the confidentiality of our respondents.

E. Who are you? "I am an interviewer with 'Behavioural Team,' a national consulting company with over fifteen years experience in behavioural research and survey design..... If you would like more information, I would be pleased to ask Ms. Manley to contact you."

THE SOLICITATION

Hello, may I have about ____ minutes of your time for a few short questions about your visit today?

My name is _____ and I work for a company called "Behavioural Team." We were hired by Environment Canada to learn about how well the *Cave and Basin* is serving visitors.

I'll have a few questions about the signs and facilities here. We are interested in finding out how well information is conveyed to visitors and what visitor like or dislike about their stay here.

[Ready...]

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Behavioural Team, A Corporation

BEHAVIOURAL OBSERVATIONS RECORD

Site_____ Date_____ Start_____ Stop_____ Int. init._____

Pre-defined length of observation periods _____
Pre-defined criterion behaviour (if any) _____

[record all visitors during the period of assigned observation]

OBSERVATION PERIOD SEQUENCE NUMBER #_____

General environmental conditions at target area_____
_____

General social/human conditions at target area_____
_____

Counts

age

0-6_____
7-11_____
12-19 _____
20-34 _____
35-49 _____
50-64 _____
65 and over _____

Target Area:

walked past _____
perused_____
stopped_____
read/viewed beyond simple contact_____
inter-acted with (if appropriate)_____

Criterion behaviour for this target area met? yes_____ no_____ moot_____

Observations of special significance eg eq problems, anti-social acts, problems of interaction with eq...
_____
_____

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DAILY FACILITY VOLUMES RECORD

DATE_____ OBSERVER INIT_____

START TIME: _____ START COUNT _____,_____,_____

[FINISH TIME: _____ FINISH COUNT _____,_____,_____]

START TIME: _____ START COUNT _____,_____,_____

[FINISH TIME: _____ FINISH COUNT _____,_____,_____]

START TIME: _____ START COUNT _____,_____,_____

[FINISH TIME: _____ FINISH COUNT _____,_____,_____]

START TIME: _____ START COUNT _____,_____,_____

[FINISH TIME: _____ FINISH COUNT _____,_____,_____]

START TIME: _____ START COUNT _____,_____,_____

[FINISH TIME: _____ FINISH COUNT _____,_____,_____]

START TIME: _____ START COUNT _____,_____,_____

[FINISH TIME: _____ FINISH COUNT _____,_____,_____]

[Use 2-hour blocks. Record the *finish* data when starting a break of quitting for the day.]

Special circumstances_____

_____

_____

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TRAFFIC COUNT RECORD

SITE_____ DATE_____ START_____ FIN_____ OBSERVER INIT_____

TRAFFIC COUNTER: START _____._____._____ FIN _____._____._____

Definition: "in" _____ "out" _____

IN

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 50

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 100

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 150

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 200

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 250

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 300

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 350

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 400

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 450

OUT

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 50

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 100

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 150

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 200

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 250

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 300

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 350

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 400

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ = 450

Special circumstances_____

_____

_____

Behavioural Team

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CONTACT RECORD

SURVEY_____ DATE_____ START_____ FIN_____ INTERVIEWER INIT_____

	COMPL?	REFU?	WHY	PARTIAL?	WHY
1.					
2.					
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Behavioural Team

APPENDIX D

DEFINITIONS FOR DATA LISTINGS

"LIST OF" [FILE] = NAME OF SURVEY

POST INTERVIEW = POST DATA
LONGHOUSE INTERVIEW = LONGHOUSE DATA
MARSH TRAIL INTERVIEW = MARSH DATA
DISCOVERY TRAIL INTERVIEW = DISCOVERY DATA

ROW = ANSWERS GIVEN BY A SPECIFIC INDIVIDUAL

COLUMN (OR "V") = VARIABLE AS IDENTIFIED ON SCORING KEYS

"." = MISSING DATA

"XTRA" = AN ADDITIONAL VARIABLE ADDED FOR PROCESSING OR COMPUTATIONAL REQUIREMENTS

"TOP LINE" STATS = FOR NUMERICS, THE BASIC OR STANDARD STATISTICS